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ABSTRACT

A computer implemented method for statistical modeling and simulation of the impact of global variation and local mismatch on the performance of integrated circuits, comprises the steps of: estimating a representation of component mismatch from device performance measurements in a form suitable for circuit simulation; reducing the complexity of statistical simulation by performing a first level principal component or principal factor decomposition of global variation, including screening; further reducing the complexity of statistical simulation by performing a second level principal component decomposition including screening for each factor retained in the first level principal component decomposition step to represent local mismatch; and performing statistical simulation with the joint representation of global variation and local mismatch obtained in the second level principal component decomposition step.